

**STANDARD****MISB KLV Metadata Registry and Processes****28 February 2019**

## **1 Scope**

This standard (ST) documents processes for the establishment and administration of the Motion Imagery Standards Board (MISB) Metadata Registry. The MISB KLV Metadata Registry defines and contains information about Universal Label (UL) metadata identifiers reserved for private use by Motion Imagery systems in the Department of Defense (DoD), Intelligence Community (IC), and National System for Geospatial-Intelligence (NSG). This ST outlines the hierarchical node structure of the MISB KLV Metadata Registry and processes for requesting, assigning, approving, and managing metadata identifiers (KLV keys).

The MISB KLV Metadata Registry MISB ST 0807 defines Key-Length-Value (KLV) metadata items managed by the MISB as Class 14 Organizationally Registered Private Items in accordance with SMPTE ST 335. MISB ST 0807 defines these items and the conventions of their use and is the authoritative source for information on these items. In the event of a conflict between ST 0807 and other MISB documents, the KLV definitions given in ST 0807 have precedence.

Note that a previous (DRAFT) version of this document was labeled EG 0602. In order to avoid confusion with MISB Standard 0602, which is often referenced without the “ST” prefix, the assigned number of this document was changed.

## **2 References**

- [1] SMPTE RP 210v13:2012 Metadata Element Dictionary.
- [2] SMPTE ST 298:2009 Universal Labels for Unique Identification of Digital Data.
- [3] SMPTE ST 335:2012 Metadata Element Dictionary Structure.
- [4] SMPTE ST 336:2017 Data Encoding Protocol Using Key-Length-Value.
- [5] MISB ST 0807.23 MISB KLV Metadata Registry, Feb 2019.
- [6] ISO/IEC 8825-1:2015 Information Technology – ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER).

### 3 Acronyms

<b>ASPA</b>	MISB Profile for Aerial Surveillance and Photogrammetry Applications
<b>BER OID</b>	Basic Encoding Rules Object IDentifier
<b>COI</b>	Community of Interest
<b>DoD</b>	Department of Defense
<b>EBU</b>	European Broadcast Union
<b>EG</b>	Engineering Guideline
<b>KLV</b>	Key Length Value
<b>MISB</b>	Motion Imagery Standards Board
<b>NGA</b>	National Geospatial Agency
<b>RP</b>	Recommended Practice
<b>SMPTE</b>	Society of Motion Picture and Television Engineers
<b>SMPTE RA</b>	SMPTE Registration Authority
<b>ST</b>	Standard
<b>UL</b>	Universal Label

### 4 Revision History

Revision	Date	Summary of Changes
ST 0607.5	02/28/2019	<ul style="list-style-type: none"> <li>Added content from the MISB ST 0807 embedded document as the document is removed in newer ST 0807 releases</li> <li>Added Node Byte 11 = 0x05; this defines a new “Key space” for future keys</li> <li>Added “KLV” to req -01; added “and underscore (_)” to Req -05; added “KLV” to Req -07</li> <li>Changed “element” to “item” for consistency with SMPTE usage when referring to metadata</li> <li>Removed references to MWG (Metadata Working Group) and Registrar Chair as the MISB staff functions to serve both</li> <li>Changed name to reflect ST 0807 registry name</li> <li>Removed Legacy Population (prior Section 6.6) as EG0104 was deprecated September 2008; deprecate Req -04</li> <li>Updated Annex B to reflect ST 0807 column names</li> <li>Updated references</li> </ul>

### 5 Introduction

The MISB KLV Metadata Registry and the processes in this standard are the result of experience since 2003 with SMPTE KLV metadata and the SMPTE RP 210 Metadata Dictionary [1].

While some registry metadata items used by the MISB community are found in RP 210 there are many that can only be met through defining an independent MISB KLV Metadata Registry. Reasons for an independent registry include:

**Privacy** – Many aspects of metadata used by DoD and intelligence agencies, including definitions should not be made public. There is need to register metadata whose very definitions and allowable parameters are sensitive, and this requires a privately controlled registry. Other metadata may be Unclassified but sensitive when defined. Sensitive applications or capabilities could be inferred from the definitions and allowable parameters, and thus should also be protected. The MISB must be able to control access to its own registry of metadata and make public only those higher-level nodes required by the SMPTE Registration Authority (SMPTE-RA).

**Speed** – KLV experimental keys were conceived by SMPTE for use by developers as the new Metadata Dictionary entries were reviewed and balloted by its membership. Experience has shown that a six-month or longer approval period within SMPTE may meet commercial product development cycles but does not meet the needs of the more urgent development of systems within DoD and intelligence agencies. The goal of the MISB KLV Metadata Registry is to approve requests for new metadata keys in a timely manner. The MISB KLV Metadata Registry streamlines a process for users with an urgent need for KLV key assignments to obtain them quickly.

**Extensibility** – The origin of the SMPTE Metadata Dictionary was in response to commercial requirements in the Joint SMPTE-EBU Task Force Study of 1997. Since its implementation the hierarchical structure of the Dictionary has addressed changing commercial needs. As KLV has seen widespread use within DoD and intelligence agencies, it has become apparent that different and more creative structures could be implemented if done privately. The MISB KLV Metadata Registry continues to use the hierarchical Universal Label (UL) structure in SMPTE ST 298 [2], but has considerable “open space” for growth and flexibility for future structures. Unless a further structure is defined below a sub-class node, new metadata item keys under the sub-class node will be assigned sequentially.

**Interoperability** – The above observations motivated the development of the MISB KLV Metadata Registry. Its structure, however, must be backward compatible with metadata systems that were developed using the SMPTE Dictionary items, or which already exist. As a result, the MISB KLV Metadata Registry has a similar, but less complex, hierarchical key structure; keys currently in use are added to the registry so they cannot be redefined for other applications in the future. Parts of the registry hierarchical structure (specifically for ASPA) must also be tailored to fit the sub-level class structure already in use by ASPA (MISB Profile for Aerial Surveillance and Photogrammetry Applications).

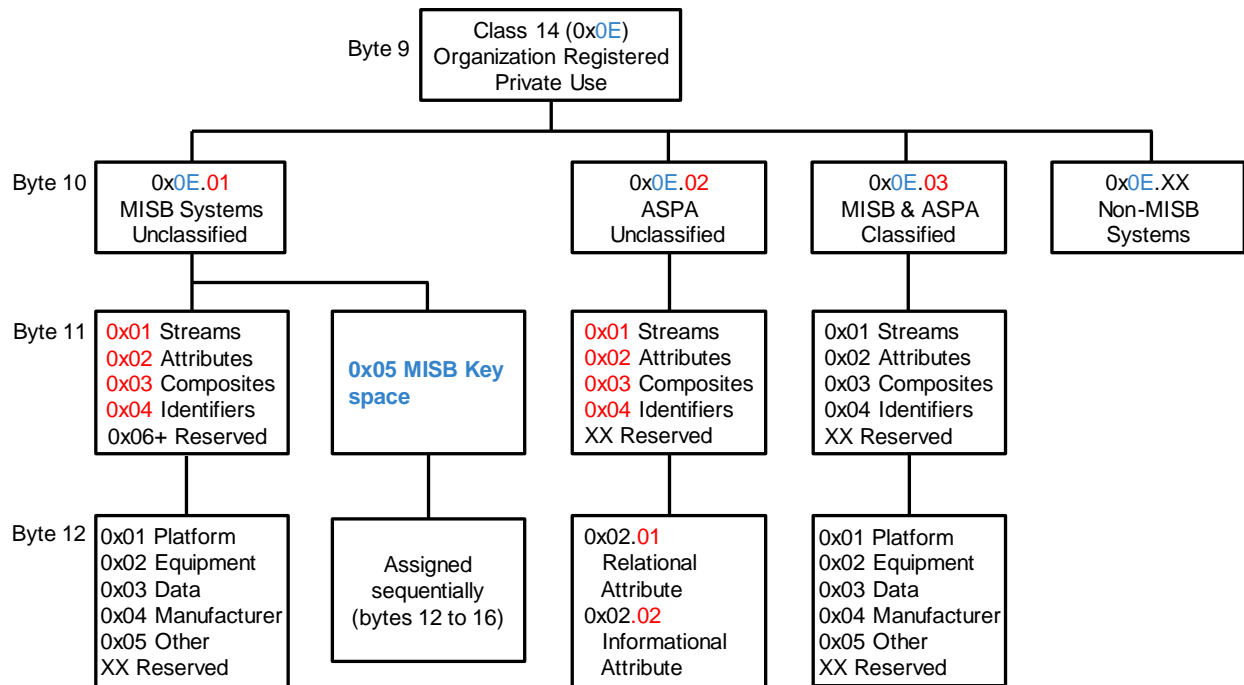
## 6 MISB KLV Metadata Registry Structure

The SMPTE Dictionary contains the provision for privately registered metadata in Class 14, and SMPTE-RA is responsible for registering and publishing higher-level node information. Class 14 in the SMPTE Dictionary is identified by a value of 0x0E (hexadecimal notation here and subsequently) in Byte 9 of the UL (Universal Label). SMPTE ST 335 [3] provides the construction of universal labels for the metadata dictionary, while SMPTE ST 336 [4] defines the byte-level encoding protocol for representing data items and groups.

Requirement(s)	
ST 0607.2-01	The MISB KLV Metadata Registry shall define as normative the 16 bytes of the UL (Universal Label).
ST 0607.2-02	Bytes 1-8 shall be populated according to SMPTE ST 336 rules.
ST 0607.2-03	Bytes 7 and 8 of the UL shall each be set to 01 (hexadecimal notation).

Bytes 7 and 8 of the UL are not to be used for version control in the MISB KLV Metadata Registry.

Figure 1 illustrates the hierarchical structure of the MISB KLV Metadata Registry. Nodes in the MISB KLV Metadata Registry are further defined in the sections below.



**Figure 1: MISB KLV Metadata Registry Hierarchy Structure**

## 6.1 Byte Orientation

Figure 2 depicts the 16-byte Universal Label organization. Bytes 1-8 are controlled by SMPTE, while MISB controls Bytes 10-16.

Byte	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Value	06	0E	2B	34	04	01	01	01	0E							
	Controlled by SMPTE									MISB Allocated Use						

**Figure 2: Byte Orientation per SMPTE and MISB Control**

The first three node values in Class 14 of the SMPTE Dictionary Byte 10, Byte 11 and Byte 12 are defined next.

## 6.2 Byte 10

Byte 10 is registered by SMPTE-RA to MISB, and defined as follows:

UL: **06.0E.2B.34.04.01.01.01 0E.01.00.00.00.00.00.00 (CRC 50883)**

Name: MISB Systems

Definition: Unclassified metadata registered by MISB (Motion Imagery Standards Board) for Systems.

UL: **06.0E.2B.34.04.01.01.01 0E.02.00.00.00.00.00.00 (CRC 7745)**

Name: ASPA

Definition: Unclassified metadata registered by MISB for ASPA.

UL: **06.0E.2B.34.04.01.01.01 0E.03.00.00.00.00.00.00 (CRC 42528)**

Name: MISB Systems and ASPA Classified

Definition: Classified metadata registered by MISB for Systems and ASPA.

Registration of any additional node values in Class 14 for use by the MISB KLV Metadata Registry will require application to SMPTE-RA and payment of a registration and management fee.

## 6.3 Byte 11

Under Byte 10 nodes 0x01, 0x02 and 0x03, the MISB KLV Metadata Registry defines a new node using Byte 11 of the UL as given in Table 1:

**Table 1: Byte 11 Values**

Byte 11	Category	Description
01	<b>Streams</b> (Data Sets and Streams)	Metadata in this sub-class are normally in streaming transport or applications. Items in this sub-class are usually expected to change each time they are observed, and their values may change either continually or sporadically. Values for these items are most often associated with a specific observation or sample time. Examples may include metadata that varies with each Motion Imagery frame or according to a time-tagged observation time.
02	<b>Attributes</b> (Individual Data Items)	Metadata in this sub-class are expected to be processed in combination with other attributes in the same composite structure. Items in this sub-class are not usually expected to change frequently with time and may be constant for large segments of a Motion Imagery scene. Values for these items are static within the composite or defined context in which they are recorded. Examples may include metadata that does not change with time but elaborates upon another metadata item or the

Byte 11	Category	Description
		Motion Imagery, such as the datum used in a location coordinate system or the size of a Motion Imagery Frame.
03	<b>Composites</b> (Structures, Groups, Packs, Sets)	Metadata in this sub-class are collections of other metadata items. Items in this sub-class almost always contain items which share a common context and registration, as a Composite provides a syntax to group items together. Examples may include a Local Set or a file transport or application where use of this sub-class signals to processing equipment that additional parsing is required.
04	<b>Identifiers</b> (Names, Numbers, Pick-Lists)	Metadata in this sub-class are persistent identifiers, local identifiers, or enumerated items. Items in this sub-class identify something which could be another metadata item or composite or Motion Imagery stream, a uniquely numbered data package or file, a physical object such as a sensor platform name, or a registration or tag such as an aircraft tail number.
05	MISB Key space	This node is introduced as of February 28, 2019. Past use of Byte11 = 0x01-0x04 have not been consistent. In addition, Bytes 5 and 6 managed by SMPTE provide somewhat similar information thus makes Byte11 redundant. Thus, MISB will now assign all future keys with Byte 11 = 0x05.
06 - 7F	Reserved	Future use
80 - FF	Illegal	May not be used

As of this document version, MISB KLV Metadata Registry MISB ST 0807.22 is the last version which will follow the guidelines for Byte 11 described in Table 1. Over time there has been inconsistent use of these values. This has led to a non-uniform sequential assignment of keys, which hampers the selection of new keys. MISB decided to end the practice of assigning Byte 11 with the values 0x01 through 0x04, and instead a value = 0x05 which opens a new key space. Previously within the reserved value space, Byte 11 = 0x05 allows for a more uniform assignment of keys in sequential fashion. Keys previously defined using values of 0x01-0x04 for Byte 11 remain valid.

## 6.4 Byte 12

Byte 12 has likewise found inconsistent assignment in the issuance of keys; thus, the MISB is not continuing the practice of honoring the value for Byte 12 according to the definitions in Table 2 within the newly created Byte 10 = 0x05 key space. However, keys previously defined using values in Table 2 for Byte 12 remain valid.

### 6.4.1 MISB Key Space

Post February 28, 2019 Byte 12 is to be assigned sequentially based on the node defined by Byte 11 = 0x05. Therefore, the value selected for Byte 12 will no longer be consistent with that given in Table 2. Keys previously assigned in concert with Table 2 and Table 3 will not be affected. Per its intended use, Byte 12 values describe additional sub-classes or items for broad categories of physical objects, data, or entities for Byte 10 nodes 1 and 3.

**Table 2: Byte 12 Values – MISB Systems**

Byte 12	Sub-Classes or Items	Description
01	<b>Platform</b>	Related to physical transportation or movement vehicles intended is to carry equipment or other objects. Examples may include aircraft, ships, ground vehicles, etc.
02	<b>Equipment</b>	Related to equipment such as sensors, communications, or other devices. Examples may include optical cameras, inertial navigation systems, radio receivers, etc.
03	<b>Data</b>	Related to non-physical or non-tangible items such as files, streams, or software. Examples may include software version numbers, Motion Imagery stream identifiers, object identifier (OID), etc.
04	<b>Manufacturer</b>	Related to information about or unique to a specific manufacturer or reserved for use by a designated manufacturer. Examples may include a manufacturer's tracking number, proprietary information, software performance parameters, etc.
05	<b>Other</b>	Related to other TBD information not included in the above sub-classes
06 - 7F	Reserved	Future use
80 - FF	Illegal	May not be used

### 6.4.2 ASPA

Table 3 indicates those Byte 12 nodes reserved under the MISB KLV Metadata Registry (for Byte 10 node 2). Any future nodes will be sequentially assigned and registered in [4].

**Table 3: Byte 12 Values – ASPA Unclassified**

Byte 12	Reserved MISB Nodes	Description
01	<b>Relational</b>	Relational attributes between data items
02	<b>Information</b>	Individual data items
03 - 7F	Reserved	Reserved for sequential key assignment as described below
80 - FF	Illegal	May not be used

## 6.5 Bytes 12-16: Sequential Key Assignment

The byte values for newly assigned items under Bytes 12-16 are incremented sequentially in accordance with rules for BER OID (Basic Encoding Rules Object Identifier) encoding defined in SMPTE ST 298 except as described below. BER OID encoding is a variable length encoding method which assigns groups of seven bits right-justified in the available space. This encoding avoids embedding bytes with value 00 in the middle of the SMPTE UL. The correspondence of decimal numbers to BER OID encoded hex strings proceeds as follows:

1 to 127:	01	to 7F
128 to 255:	81 00	to 81 7F
256 to 383:	82 00	to 82 7F
384 to 16383:	83 00	to FF 7F
16384 to 16511:	81 80 00	to 81 80 7F

and so on.

More details are provided in SMPTE ST 298 [2] and ISO/IEC 8825-1 [5].

**NOTE:** within MISB ST 0807 the majority of BER OID encoded values lie in the 1 to 127 range. Per the revisions to the declared use of Node Byte 11 = 0x05 (previously reserved) in Section 6.3 where Bytes 12-16 are sequentially incremented from left to right (Byte 12 to Byte 16), all new key assignments will only use BER OID values in the 1 to 127 range.

## 6.6 MISB KLV Metadata Registry Procedures

Figure 3 shows the approval procedures used by the MISB and the individual tasked with maintaining the MISB KLV Metadata Registry. These procedures are described below.

### 6.6.1 Request Process

The procedure for creating a new entry (i.e., key) in the MISB KLV Metadata Registry begins with a request from a developer of a system or application (i.e., the requestor), who has been unable to find suitable KLV keys in the public SMPTE Registry or in the existing MISB Registry. The process begins with the requestor providing the MISB with the information shown in Annexes A and B either on-line (preferred), in softcopy as e-mail attachments, or in hardcopy.

### 6.6.2 New Key Review and Approval

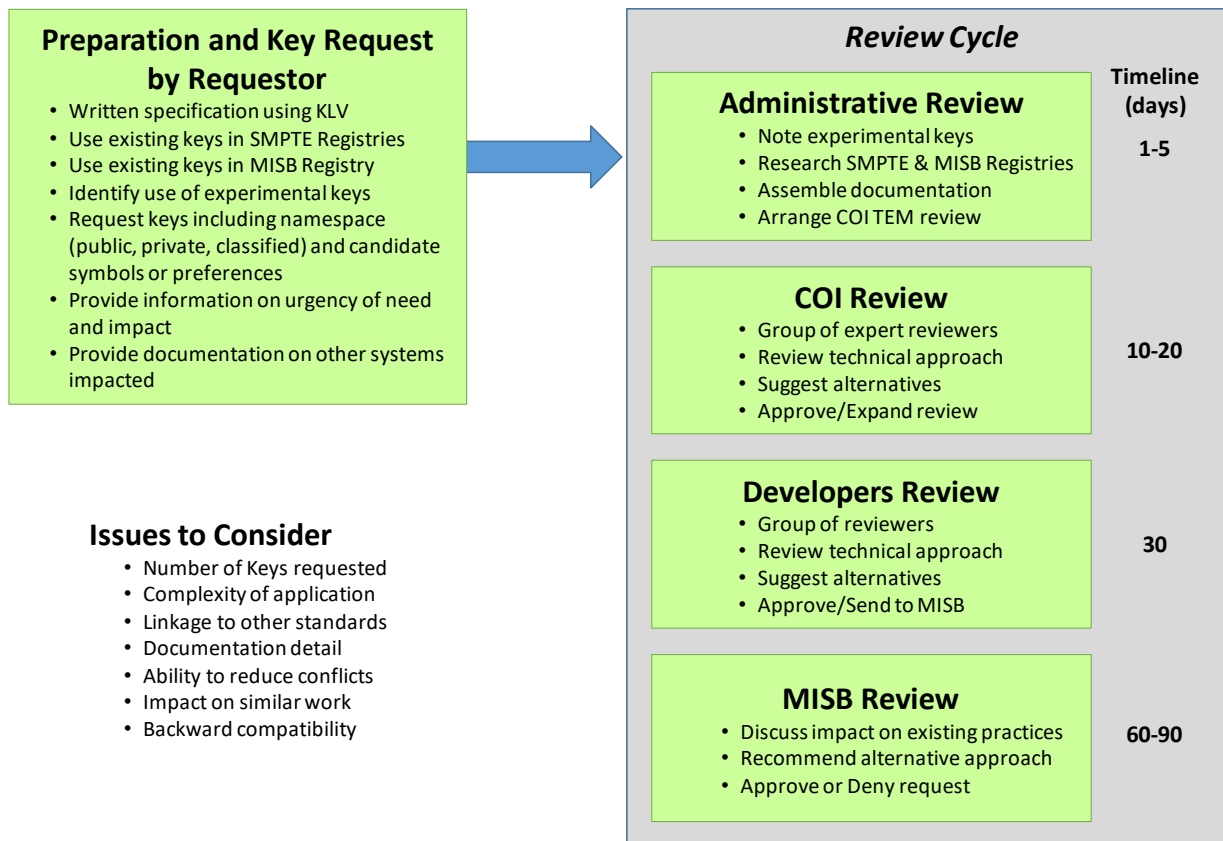
One of the principal goals of the MISB KLV Metadata Registry is to issue new metadata keys quickly; this process depends on several factors such as:

**Number of keys requested** – the cycle time of review, approval and assignment of keys depends on the number requested.

**Complexity of application** – a new application of metadata will need to be understood to some level of detail. More complex applications take longer to understand and approve.

**Linkage to other standards** – when new metadata keys are tied to draft documents undergoing MISB review or depend on other documents not yet approved, the request for new keys may be delayed pending document approval.





**Figure 3: MISB KLV Metadata Registry Approval Process (Informative)**

**Detail in documentation from requestor** – insufficient information from a requestor can cause delay.

**Impact on similar work done by others** – if the proposed application overlaps with or parallels similar work by others, more time may be needed for resolution before approval.

**Backward compatibility issues** – if the proposed application is not backward compatible with existing implementations, this could lengthen or delay its approval until resolved.

Three types of review may be used when a request is received. All requests will first undergo Nominal Review and Approval, at which point they will either be approved or sent into Exceptional or Expedited Reviews.

### 6.6.2.1 Review Cycle

**Administrative Review by MISB** – An initial administrative review by the MISB will determine if the requestor has provided all the needed technical information. Additional information may be requested to complete the information package. The MISB is sufficiently familiar with the SMPTE RP 210 Dictionary and the MISB ST 0807 Registry to determine if requested keys currently exist. If so, the requestor and the MISB will mutually determine if existing keys can be used, or if new keys are needed. New keys will then either

be assigned immediately or, if there is still uncertainty about the application or there is disagreement about which keys are needed, the MISB will initiate a Community of Interest (COI) online review. The administrative review process, including scheduling a COI review, must be accomplished within 5 business days from receipt of a complete request and the MISB must provide the COI review members with a summary of actions taken and a copy of the request package.

**Community of Interest (COI) Review** – The COI online reviewers will consist of 2-5 individuals who are familiar with the SMPTE and MISB metadata standards and the workings of the MISB, plus the requestor and MISB staff. They will review the request and attempt to resolve any conflicts or issues and either recommend key assignments, recommend alternatives and work with the requestor to revise the request, or refer the request to a group of system developers for continued examination and exceptional review. The COI review must be completed no more than 20 business days after completion of the initial administrative review. The MISB must prepare and post minutes of the COI review to document issues discussed and decisions and recommendations made.

**Developers Review** – The group will consist of 5 or more Motion Imagery systems developers plus the requestor and MISB personnel who will meet to resolve the request for additional keys. The group will recommend key assignments, work with the requestor to recommend alternatives and revise the request or refer the request to a formal meeting of the MISB for continued examination and exceptional review. The developer review must be completed no more than 30 business days after completion of the COI review. The MISB must prepare and post minutes of the developers review to document issues discussed and decisions and recommendations made.

**MISB Review** – The MISB and requestor will meet to resolve any remaining issues with the request. The MISB review may result in additional meetings as needed. The MISB review must be completed no more than 30-60 business days after completion of the review. The MISB must prepare and post minutes of the MISB review to document issues discussed and decisions and recommendations made.

#### 6.6.2.2 Expedited Review

When justified, the MISB may be petitioned for expedited review and approval of metadata keys.

**Justification for Expedited Review and Approval** – Written justification for expedited review and approval by the MISB may include extremely rapid deployment of a new Motion Imagery capability, highly compartmented security which precludes review by the MISB or a COI, delays due to exceptional review that will significantly impact larger program schedule, or other extenuating circumstances which prevent the nominal or exceptional review processes from being followed.

**Follow-up COI Advisory Review** – When the MISB approves new keys under the expedited review process there will be a follow-up COI advisory review within 30 days to examine the request package, if possible, and make recommendations to the requestor if any changes to the application or implementation can be made before employment. The COI advisory review will document the expedited approval for the record.

### 6.6.3 MISB KLV Metadata Registry

#### 6.6.3.1 Version Control, Usage and Promulgation

- The MISB KLV Metadata Registry ST 0807 is under version control. When new keys are added to the MISB ST 0807 registry, or a key is deprecated/retired, a new, incremented version of MISB ST 0807 shall be approved by the MISB.
- A MISB KLV key shall only be valid after it is promulgated in an approved version of MISB ST 0807.
- The correct usage of a key shall be defined jointly by the latest promulgated version of MISB ST 0807 and the latest version of the defining MISB document.
- MISB approved versions of ST 0807 shall be promulgated in accordance with the MISP.

#### 6.6.3.2 Operation and Maintenance

The MISB KLV Metadata Registry will be operated and maintained by the National Geospatial-Intelligence Agency (NGA).

#### 6.6.3.3 Key Assignment

The MISB will assign new keys based on the initial administrative review or recommendations from subsequent reviews. Database entries and on-line notification of key assignments will be published upon completion of the Review and Approval cycle post periodic MISB Forums. Key usage may be approved sooner upon request.

### 6.7 Deprecated Requirements

MISB EG 0104 was deprecated September 2008. The Predator UAV Universal Label (key) is registered in the MISB ST 0807 KLV Metadata Registry. The following requirement is not necessary.

Requirement	
ST 0607.2-04 (Deprecated)	The Predator UAV Universal Metadata Set key defined in MISB EG 0104 is 06.0E.2B.34.02.01.01.01 0E.01.01.02.01.01.00 00 and shall be inserted into the MISB KLV Metadata Registry to ensure backward compatibility with systems already using the assigned key.

## Annex A MISB KLV Metadata Registry Request Form (Informative)

1. Briefly describe how the requested 16-byte KLV key will be used. For example, within a Universal Set, Local Set, etc.:

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2. Briefly describe the application and environment in which the new KLV key will be used.

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3. Reference any MISB or other specifications being reviewed but not yet published for which the KLV key is needed. (Attach documentation as needed.)

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4. Briefly explain why existing KLV keys or KLV structures (i.e., sets, packs, etc.) in SMPTE RP 210 or the MISB ST 0807 registries cannot be used.

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5. Identify any experimental key that will be used until a permanent key is assigned.

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6. Provide information on the urgency of the need and the timeframe in which it is needed.

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7. Provide documentation on any other systems that may be impacted by the requested metadata. (Attach documentation as needed.)

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## Annex B MISB KLV Metadata Registry Contents

**Status** – Flag to indicate “New”, “Active”, “Deprecated”, etc. states of a UL .

**Item No.** – Aides tracking and counting of keys in registry.

**Universal Label (UL) 16-Byte Key (Normative)** – The 16-byte Universal Label consists of a 2-byte UL Header, a 6-byte UL Designator, and an 8-byte Item Designator as defined in SMPTE ST 336. The eight bytes of the Item Designator (last 8 bytes of the UL) uniquely identify the specific item in the MISB KLV Metadata Registry in a hierarchical fashion. The first byte in the Item Designator and subsequent bytes enable the hierarchical identification of subclasses and/or individual data items.

**UL Key Check Sum (CRC) (Normative)** – This field is computed from the 16 bytes of the UL Key using a standard 16-bit CRC computation (reference and macro available from the MISB). The value is a pseudo unique number for each key ranging from 0 to 65536. This value provides a method for validating that a key that has been copied correctly in programs, documents or between people.

**Name (Normative)** – This field is the name in US English for the data item or class/subclass identified by the universal label or symbol.

**Symbol (Normative)** – Each MISB KLV Metadata Registry item may also be uniquely identified using its primary assigned symbol. A symbol consists of a string of alphanumeric characters and provides an alternative to the Universal Label for identifying an item in text-based data representations such as the Extensible Markup Language (XML) and other computer languages. To enable the use of symbols in a wide range of computer languages other than XML, symbols are to be composed only of the characters A-Z, a-z, 0-9, and \_, and are to begin with an alpha character (A-Z, a-z) or an underscore (\_). Symbols are intended for machine processing, and the choice of symbol is not solely determined by linguistic criteria. Symbols are defined for both nodes and leaves.

Requirement(s)	
ST 0607.4-05	Registry symbols shall be composed only of the characters A-Z, a-z, 0-9, and underscore (_).
ST 0607.4-06	Registry symbols shall begin with an alpha character (A-Z, a-z) or an underscore (_).

**Definition (Description) (Normative)** – This field is the detailed and unambiguous US English language definition of the data item or class/subclass.

**Tree Segment (Node or Leaf) (Normative)** – For search and sorting purposes the MISB KLV Metadata Registry entries are identified as either a node or a leaf in the hierarchy.

**Data Type (Normative)** – This is the text description of the underlying data type. The description is used to determine the most appropriate type in the Types Listing reference. For numeric types a natural value range is defined for that type. For example, a 1-byte UINT will have a natural range from 0 to 255.

**Default Value Length (Bytes) (Stated)** – This entry states a default or other limitation on the length provided by the originator on the permitted length in bytes or characters of the value of the data item. In some cases, such as a text string, the length is not defined or limited, and the value length is described as variable. However, in practice, a variable length may be limited by the application specification. The value length is a default or nominal length. The length field in a KLV item determines the true value length.

**Min Value** – This field states the smallest permitted value for the data item, if it is not the same as the data type’s natural range (see Data Type). Units are those identified in the Units of Measurement entry. Note that the defining document may place restrictions on a minimum value that has not already been defined by the underlying data type.

**Max Value** – This field states the largest permitted value for the data item, if it is not the same as the data type’s natural range (see Data Type). Units are be those identified in the Units of Measurement entry. Note that the defining document may place restrictions on a maximum value that has not already been defined by the underlying data type.

**Allowed Values (Normative)** – This MISB KLV Metadata Registry entry states any limitation on enumerated values allowed for the data item. Units are those identified in the Units of Measurement entry.

**Unit of Measurement (Normative)** – This field specifies standard of basic quantity or increment by which something is divided, counted, or described. This value is normative but only applicable to entries with measurement values. ISO metric standard units are to be used (ISQ, see ISO 80000 series). An enumerated list of the units of measure is to be maintained to ensure consistency.

Requirement	
ST 0607.4-07	The MISB KLV Metadata Registry Unit of Measurement field shall use ISO metric standard units (ISQ, see ISO 80000 series).

**Measurement Type (Normative)** – This MISB KLV Metadata Registry entry defines the measurement type for the unit of measurement. For example, Temperature Measurement Type, Angular Measurement Type, Geographical Measurement Type for “Degrees,” etc. This value is normative but only applicable to entries with measurement values.

**Defining Document or Standard (Normative)** – If a document that provides further information about a metadata item is available, then this field is to reference that standard or the authoritative source of the information. For example, a defining document may be used to specify the set of permissible values for an enumeration when the assigned type kind is a Basic Type rather than an Enumeration.

Requirement	
ST 0607.4-08	If a document that provides further information about a metadata item is available, then the Defining Document or Standard field shall reference that document.

**Links to Other Reference Documents (Informative)** – References or links to other documents that may be useful in implementing the MISB KLV Metadata Registry entry.

**Effectivity Date (Normative)** – The date on which the MISB KLV Metadata Registry entry becomes effective and may be used operationally.

**Effectivity Dictionary Version (Normative)** – The version of the Registry on which the entry becomes effective and may be used operationally.

**Notes or Comments (Informative)** – This field can be used to provide additional information that may assist in the interpretation and correct application of the data item or a class/subclass of data items. This information cannot be deduced from the other normative and informative fields.

#### **Registry Administrative Information**

As of MISB ST 0807.13, the following entries are no longer distributed in the public version of the MISB KLV Metadata Registry. The MISB still requests this information from submitters for the purpose of addressing questions and comments regarding key requests or submissions.

**Requestor Name (Informative)** – Name of the person who requested the MISB KLV Metadata Registry entry.

**Requestor Organization (Informative)** – Organization of the person who requested the MISB KLV Metadata Registry entry.

**Requestor Address (Informative)** – Street address of the person who requested the MISB KLV Metadata Registry entry.

**Requestor Telephone (Informative)** – Telephone number of the person who requested the MISB KLV Metadata Registry entry.

**Requestor FAX (Informative)** – Fax number of the person who requested the MISB KLV Metadata Registry entry.

**Requestor E-mail (Informative)** – E-mail address of the person who requested the MISB KLV Metadata Registry entry.

**Date Approved (Informative)** – Date that the MISB received approval to log the MISB KLV Metadata Registry entry.

**Approver Name (Informative)** – Individual or organizational name approving the MISB KLV Metadata Registry entry.